

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): An ionic liquid type functional material comprising an aromatic compound which has a fluorine-containing ether chain and is represented by the formula (1):



wherein -D- is a fluoroether unit represented by the formula (1-1):



in which R is at least one selected from divalent fluorine-containing alkylene groups having 1 to 5 carbon atoms in which at least one of hydrogen atoms is replaced by fluorine atom; n is an integer of from 1 to 20, and when m is not less than 2, two or more of D may be the same or different;

Ra is a monovalent organic group which has 1 to 20 carbon atoms and does not contain said D, and when m is not less than 2, two or more of Ra may be the same or different; m is an integer of from 1 to 4;

Ry is a mono-, di-, tri- or tetra-valent organic group having 2 to 30 carbon atoms which has an amino group and/or a salt thereof and contains an aromatic ring structure, provided that a unit of -O-O- is not contained in said formulae (1) and (1-1).

2. (original): The ionic liquid type functional material of Claim 1, wherein in said formula (1), -O-R- in -D- has at least one kind of fluoroether unit selected from the group consisting of -(OCFZ¹CF₂)-, -(OCF₂CF₂CF₂)-, -(OCH₂CF₂CF₂)-, -(OCFZ²)-, -(OCZ³₂)-, -(CFZ¹CF₂O)-, -(CF₂CF₂CF₂O)-, -(CH₂CF₂CF₂O)-, -(CFZ²O)- and -(CZ³₂O)-, wherein Z¹ and Z² are the same or different and each is H, F or CF₃; Z³ is CF₃.

3. (previously presented): The ionic liquid type functional material of Claim 1, wherein Ra is selected from fluorine-containing alkyl groups Rx having 1 to 20 carbon atoms.

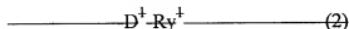
4. (previously presented): The ionic liquid type functional material of Claim 1, wherein Ra is a monovalent organic group Ry' having 2 to 20 carbon atoms which has at least one selected from basic functional groups Y¹ and/or salts Y² of the basic functional groups and contains an aromatic ring structure.

5. (previously presented): The ionic liquid type functional material of Claim 4, wherein the basic functional group or the salt of the basic functional group contained in said Ry' is at least one kind selected from amines, imines, enamines, ketimines, azines and salts thereof.

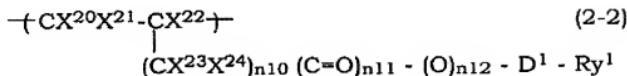
6. (currently amended): An ionic liquid type functional material comprising a fluorine-containing polymer represented by the formula (M-1):



wherein the structural unit M1 is at least one selected from structural units derived from ethylenic monomers having, in a side chain thereof, a moiety represented by the formula (2):



in which a structural unit represented by the formula (2-2):



wherein X^{20} , X^{21} , X^{23} and X^{24} are the same or different and each is hydrogen atom or fluorine atom; X^{22} is selected from hydrogen atom, fluorine atom, CH_3 and CF_3 ; $n10$ is 0 or an integer of 1 or 2; $n11$ and $n12$ are the same or different and each is 0 or 1; $-D^1-$ is a fluoroether unit represented by the formula (2-1):



wherein R^1 is at least one selected from divalent fluorine-containing alkylene groups having 1 to 5 carbon atoms in which at least one of hydrogen atoms is replaced by fluorine atom; $n1$ is an integer of from 1 to 20; Ry^1 is a monovalent organic group having 2 to 30 carbon atoms which has at least one selected from basic functional groups Y^1 and/or salts Y^2 of the basic functional groups and contains an aromatic ring structure, provided that a unit of $-O-O-$ is not contained in the structural unit M1 and the formula (2-1); the structural unit A1 is a structural unit derived from a monomer being copolymerizable with the monomer being capable of providing the structural unit M1, and the structural units M1 and A1 are contained in amounts of from 1 to 100 % by mole and from 0 to 99 % by mole, respectively.

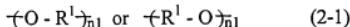
7. (previously presented): An ionic liquid type functional material comprising a fluorine-containing polymer represented by the formula (M-2):

-(M2)-(A2)- (M-2)

wherein the structural unit M2 is a structural unit derived from an ethylenic monomer having, in its side chain, a moiety represented by the formula (3):



in which $-D^1-$ is a fluoroether unit represented by the formula (2-1):



wherein R^1 is at least one selected from divalent fluorine-containing alkylene groups having 1 to 5 carbon atoms in which at least one of hydrogen atoms is replaced by fluorine atom; $n1$ is an integer of from 1 to 20; Ry^2 is a di-, tri- or tetra-valent organic group having 2 to 30 carbon atoms which has at least one of basic functional groups Y^1 and/or salts Y^2 of the basic functional groups and contains an aromatic ring structure; Ra^1 is a monovalent organic group which has 1 to 20 carbon atoms and does not contain D^1 , and when $m1$ is not less than 2, two or more of Ra^1 may be the same or different; $m1$ is an integer of from 1 to 3, and when $m1$ is not less than 2, two or more of D^1 may be the same or different, provided that a unit of $-O-O-$ is not contained in the structural unit M2 and the formulae (2-1); the structural unit A2 is a structural unit derived from a monomer being copolymerizable with the monomer being capable of providing the structural unit M2, and the structural units M2 and A2 are contained in amounts of from 1 to 100 % by mole and from 0 to 99 % by mole, respectively.

8. (original): The ionic liquid type functional material of Claim 7, wherein Ra^1 is selected from fluorine-containing alkyl groups Rx^1 having 1 to 20 carbon atoms.

9. (previously presented): The ionic liquid type functional material of Claim 6, wherein the basic functional group Y^1 or the salt Y^2 of the basic functional group contained in said Ry^1 is at least one kind selected from amines, imines, enamines, ketimines, azines and salts thereof.

10.-14. (canceled).

15. (previously presented): The ionic liquid type functional material of Claim 2, wherein Ra is selected from fluorine-containing alkyl groups Rx having 1 to 20 carbon atoms.

16. (previously presented): The ionic liquid type functional material of Claim 2, wherein Ra is a monovalent organic group Ry' having 2 to 20 carbon atoms which has at least one selected from basic functional groups Y^1 and/or salts Y^2 of the basic functional groups and contains an aromatic ring structure.

17. (previously presented): The ionic liquid type functional material of Claim 16, wherein the basic functional group or the salt of the basic functional group contained in said Ry' is at least one kind selected from amines, imines, enamines, ketimines, azines and salts thereof.

18-19. (canceled).

20. (previously presented): The ionic liquid type functional material of Claim 7, wherein the basic functional group Y^1 or the salt Y^2 of the basic functional group contained in said Ry^2 is at least one kind selected from amines, imines, enamines, ketimines, azines and salts thereof.